

Groundwater Transfer Review Summary Form

Transfer/PA # T- 14162

GW Reviewer Grayson Fish Date Review Completed: 3/18/2024

Summary of Same Source Review:

☐ The proposed change in point of appropriation is not within the same aquifer as per OAR 690-380-2110(2).

Summary of Water Level Decline Condition Review:

☒ Water levels at the original point(s) of appropriation have exceeded the allowed decline threshold defined by conditions in the originating water right.

Summary of Injury Review:

☐ The proposed transfer will result in another, existing water right not receiving previously available water to which it is legally entitled or result in significant interference with a surface water source as per 690-380-0100(3).

Summary of GW-SW Transfer Similarity Review:

☐ The proposed SW-GW transfer doesn't meet the definition of "similarly" as per OAR 690-380-2130.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations.



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Ground Water Review Form:

- ☒ **Water Right Transfer**
☐ **Permit Amendment**
☐ **GR Modification**
☐ **Other**

Application: T-14162

Applicant Name: Hickey Organics

Proposed Changes: ☒ POA ☐ APOA ☐ SW→GW ☐ RA
☐ USE ☐ POU ☐ OTHER

Reviewer(s): Grayson Fish, Justin Iverson

Date of Review: 3/13/2024

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 6/4/25

The information provided in the application is insufficient to evaluate whether the proposed transfer may be approved because:

- ☐ The water well reports provided with the application do not correspond to the water rights affected by the transfer.
- ☐ The application does not include water well reports or a description of the well construction details sufficient to establish the ground water body developed or proposed to be developed.
- ☐ Other _____

1. Basic description of the changes proposed in this transfer: (Note: this March 18, 2024 review supersedes a previous review completed on October 19, 2023) The applicant proposes to transfer 389.5 acres of supplemental irrigation use associated with **Certificate 96331** from authorized POA "**Well 1**" (**KLAM 53717**) to proposed POA "**Hickey Well**" (**KLAM 61440**) located approximately 2,700 feet to the west. Proposed POA "**Hickey Well**" is not currently an authorized POA for any water right.

Note: Transfer application T-14145 also proposes to modify **Certificate 96331** by changing the POA (**KLAM 61328**) for 115.3 acres of use, separate from the 389.5 acres proposed by this transfer.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments: Both "**Well 1**" and the "**Hickey Well**" source water from Late Tertiary volcanic rock at depth.
3. a) Is the existing authorized POA subject to a water level decline condition?
☒ Yes ☐ No Comments: _____
- b) If yes, for each POA identify the reference level, most recent spring-high water level, and whether an applicable permit decline condition has been exceeded: _____

Existing Authorized POA for Cert 96331	Reference Level Depth Below Land Surface (feet)	Max Decline Below Reference Level (feet)	March 2025 water level at KLAM 53717 (hydrograph)	Permit decline condition exceeded?
KLAM 53717	29.2	25	55.67	Yes

4. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
☐ Yes ☒ No Both wells source water from Late Tertiary volcanic rock at depth.
- b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.): _____
5. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?
☒ Yes ☐ No Comments: The closest senior groundwater right is Permit G-15210 using **KLAM 52932** as a POA located ~1,000 feet to the north of proposed POA “**Hickey Well**” compared to the ~3,000 feet west-northwest from the authorized POA “**Well 1**”. The reduced intervening distance of the proposed POA compared to the authorized POA will likely cause an increase in interference with **KLAM 52932**.
- b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled?
☐ Yes ☒ No If yes, explain: A Theis Time-Distance drawdown analysis was used to estimate the potential drawdown that would be observed in a well 1,000 feet away from the proposed POA at the maximum allowable rate ($389.5 \text{ acres} * 1/80 \text{ cfs/ac} = 4.87 \text{ cfs}$) for the duration of the irrigation season (214 days). Results indicate that use from the proposed POA would cause up to 20 feet of estimated drawdown over the course of the irrigation season when compared to up to 15 feet of estimated drawdown if that use was to remain at the authorized POA (see attached Theis analysis). Due to the generally high-transmissivity and thickness of the aquifer it is unlikely that the proposed change at the maximum allowed rate of use would result in a nearby reasonably efficient well that fully penetrates the aquifer not receiving the water to which it is legally entitled to.
6. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another surface water source**?
☐ Yes ☒ No Comments: The proposed change would not substantially change the impacts to nearby surface water sources in the area.
- b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any **surface water sources** resulting from the proposed change?
Stream: _____ ☐ Minimal ☐ Significant
Stream: _____ ☐ Minimal ☐ Significant
Provide context for minimal/significant impact: _____
7. For SW-GW transfers, will the proposed change in point of diversion affect the surface water source similarly (as per OAR 690-380-2130) to the authorized point of diversion specified in the water use subject to transfer?

☐ Yes ☐ No Comments: _____

8. What conditions or other changes in the application are necessary to address any potential issues identified above: _____
9. Any additional comments: Groundwater level data from wells in the Merrill area indicate significant declines have occurred since 2001 (See attached area well hydrograph). **KLAM 53717**, authorized POA “**Well 1**”, has seen 40.25 feet of decline from an annual high of 24.38 feet below land surface (bls) in April 8, 2004 to 64.63 feet bls in March 27, 2023 (See attached hydrograph of **KLAM 53717**).

A point of concern for this proposed transfer is that the authorized From-POA “Well 1” (KLAM 53717) has triggered the decline conditions stipulated in the associated water right.

The certificate associated with the From-POA transfer is **96331**. Certificate **96331** lists use as “Supplemental Irrigation” and establishes a reference level for **KLAM 53717** with the following language: “*The reference level against which any further measurements will be compared to 29.20 feet below land surface.*”

Certificate **96331** contains three water level decline conditions. The most relevant, and most likely to be validated is the following: “*The water user shall discontinue use of, or reduce the rate or volume of withdrawal from, the well(s) if annual water level measurements reveal any of the following events: (C) A water level decline of 25 or more feet.*”

OWRD staff have collected water level measurements from **KLAM 53717** since 2004. Water level measurements indicate that **KLAM 53717** has triggered the 25 feet or more decline condition starting in 2022 when water levels dropped below 54.20 feet below land surface.

Recommended Condition

Area hydrographs indicate that groundwater levels in the vicinity are very similar to each other (within 3 feet) and exhibit the same trends. It is expected that static groundwater elevations would be very similar between FROM POA **KLAM 53717** and TO POA **KLAM 61440** and allows for a transfer of the established reference level listed on **Cert. 96331**. The reference level listed on **Cert. 96331** for **KLAM 53717** is 29.20 feet below land surface. The land surface elevation as determined by LIDAR measurement is 4,082.48 feet NAVD1988 which equates to a reference level elevation of 4,053.28 feet NAVD1988. The land surface elevation at the location of **KLAM 61440** as determined by LIDAR measurement is 4,085.79 feet NAVD1988 which results in an equivalent reference level of 32.51 feet below land surface elevation.

The following provision is recommended as a condition for T-14162 (if approved) for future groundwater use management of KLAM 61440 under the resulting permit:

Certificate 96331 establishes a reference static water level of 29.20 feet below land surface to which decline conditions are to be compared to. If approved, the certificate resulting from this transfer should establish 32.51 feet below land surface as the reference static water level which decline conditions are compared to for KLAM 61440.

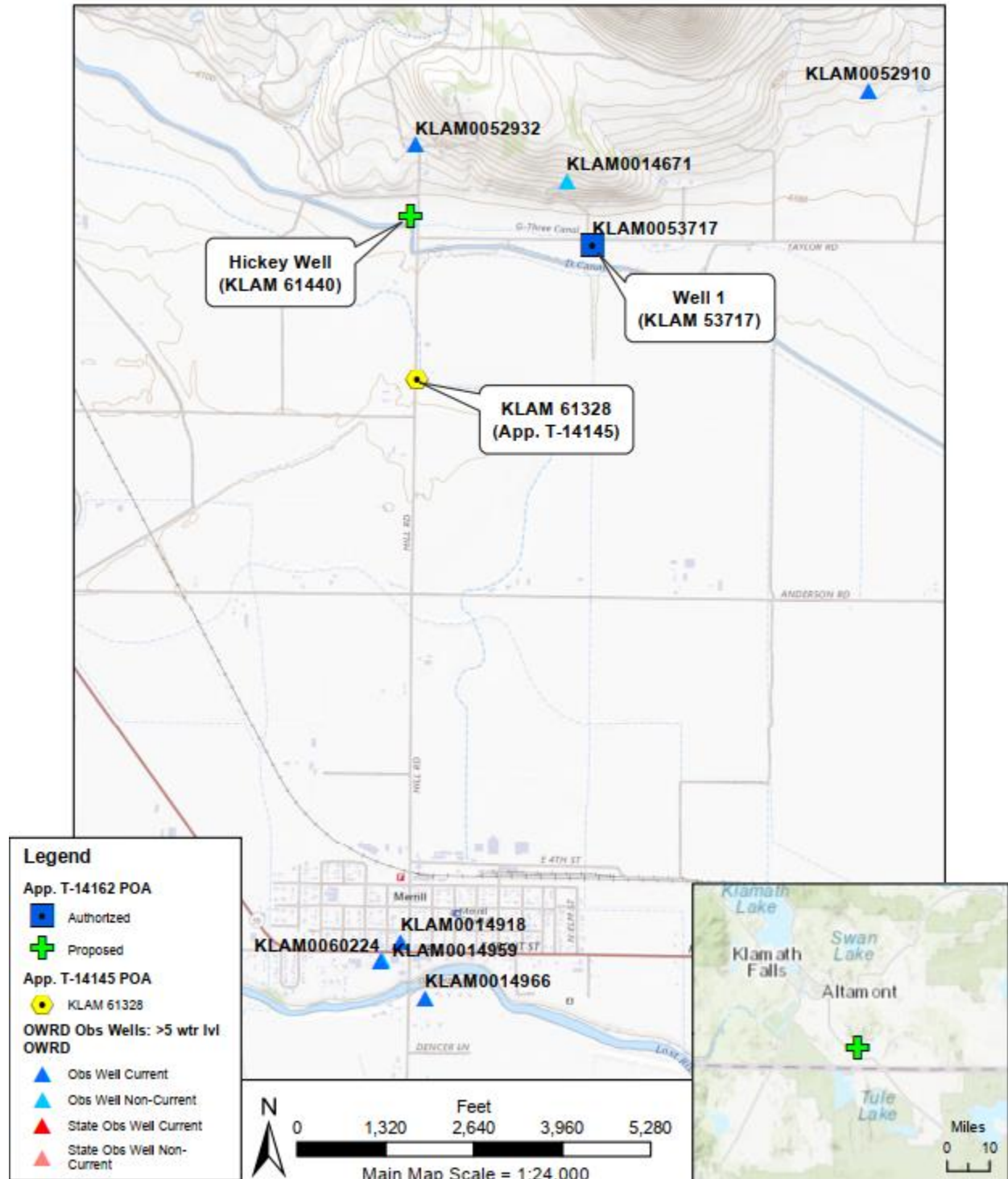
References

Jenks, M.D., unpublished, Geologic compilation map of part of the Upper Klamath Basin, Klamath County, Oregon: Portland, Oreg., Oregon Dept. of Geology and Mineral Industries, scale 1:100,000.

Oregon Water Resources Department. Groundwater Information System (GWIS) – Accessed 3/19/2024

Oregon Water Resources Department. Water Rights Information Query – Accessed 3/19/2024

Transfer Review Map

T-14162**Theis Time-Distance Drawdown**

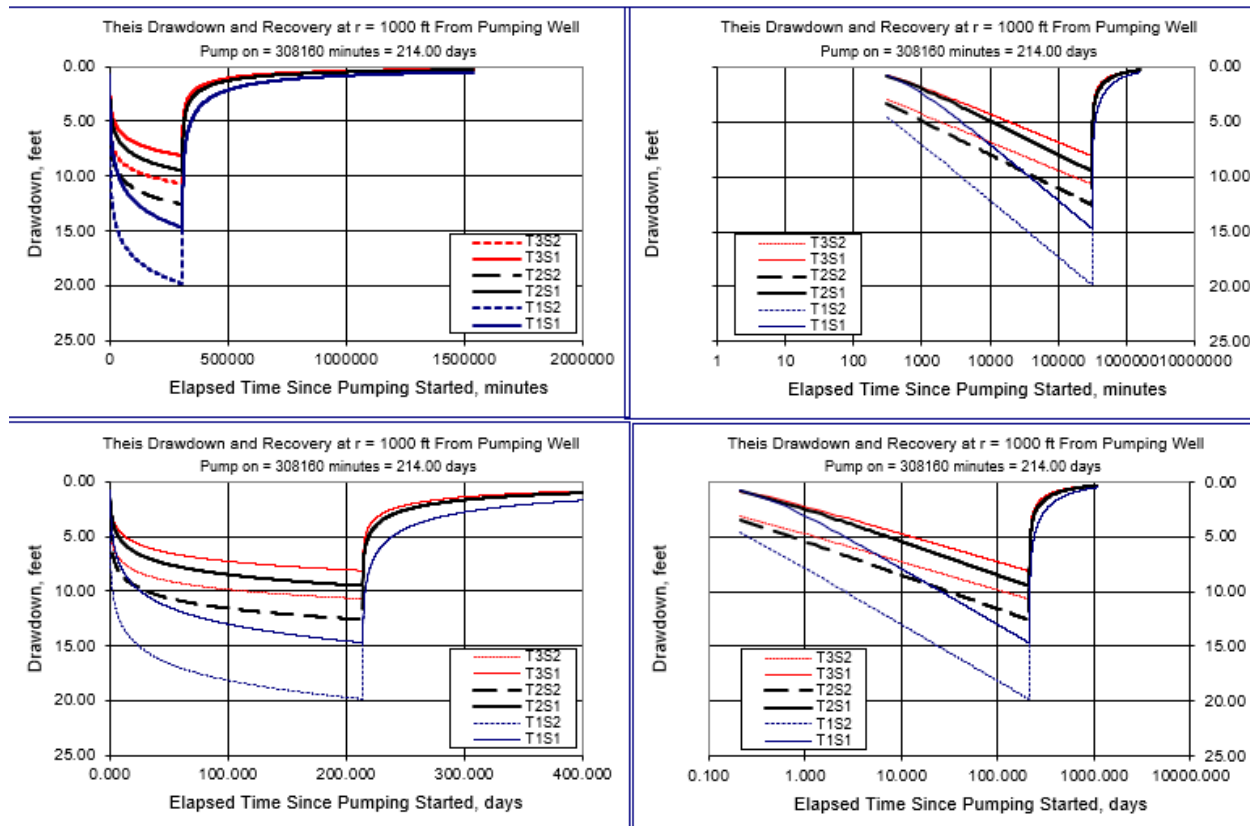
Theis Time-Drawdown Worksheet v.5.00

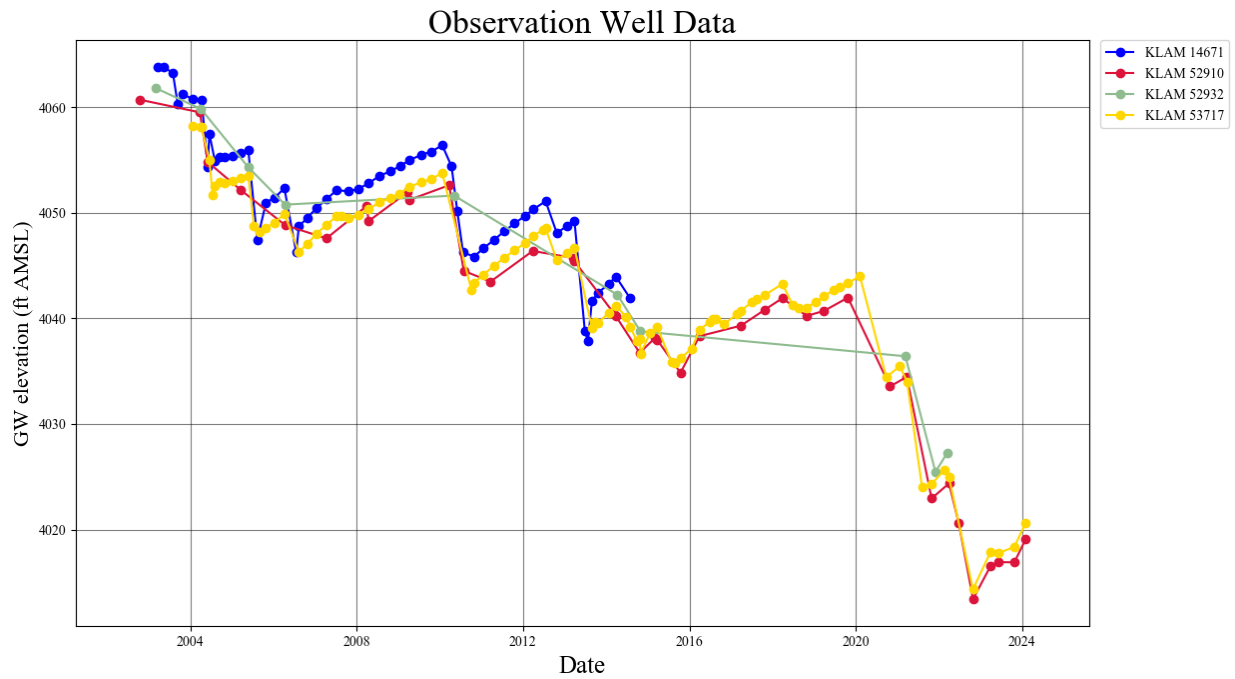
Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r , from a pumping well for 3 different T values and radial distance, r , from a pumping well for 3 different T values and 2 different S values.

Written by Karl C. Wozniak September 1992. Last modified December 17, 2019

Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		214		d	
Radial distance from pumped well:	r		1000		ft	
Pumping rate	Q		4.87		cfs	2,185.66 gpm
Hydraulic conductivity	K	15	25	30	ft/day	4.87 cfs
Aquifer thickness	b		1000		ft	292.20 cfm
Storativity	S_1		0.01			420,768.00 cfd
	S_2		0.001			9.66 at/d
Transmissivity Conversions	T_ft2pd	15000	25000	30000	ft2/day	
	T_ft2pm	10.416667	17.361111	20.833333	ft2/min	
	T_gpdft	112200	187000	224400	gpd/ft	

Use the Recalculate button if recalculation is set to manual



Area Hydrographs**KLAM 53717 Hydrograph – 25 ft decline condition**